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Performance Oriented Packaging Testing of the BLU-91/B Antitank Mine and the BLU-92/B Antipersonnel Mine.

12. PERSONAL AUTHOR(S)

Chris Dzury

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19. ABSTRACT (Continue on reverse if necessary and identify by block number)

This report contains the test results and test procedures for Performance Oriented Packaging Tests performed on the pack for both the BLU-91/B Antitank Mine and the BLU-92/B Antipersonnel Mine. This pack consists of four fiberboard boxes (each containing 12 mines) packed inside a wood box. The fiberboard boxes are packed in two layers of two boxes within the wood box. Both mines are packed in the same way and have the same proper shipping Name and Identification Number which is "Mines UN 0137."

20. DISTRIBUTION/AVAILABILITY OF ABSTRACT

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21. ABSTRACT SECURITY CLASSIFICATION

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22a. NAME OF RESPONSIBLE INDIVIDUAL

Steve Ruffin

22b. TELEPHONE (Include Area Code)

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22c. OFFICE SYMBOL

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1. DATA SHEET

Container:

Type: Box

UN Code: 4C

Specification Number: PPP-B-621

Material: Wood

Capacity: 5257.83 cubic inches

Dimensions: Inside: 24 3/4 X 16 1/2 X 12 7/8

Tolerance: +1/8

Packing and Marking Drawing: 12589967

Gross Weight: 260 lbs.

Closure Method (Method/Type): Nails and Metal Strapping

Product 1:

Name: Mine, Antitank, BLU-91/B

NSN: None Assigned

Part Number: 9330381

Proper Shipping Name: Mines

Identification Number: 0137

Physical State: Solid

Quantity per Container: 48

Product 2:

Name: Mine, Antipersonnel, BLU-92/B

NSN: None Assigned

Part Number: 9292710

Proper Shipping Name: Mines

Identification Number: 0137

Physical State: Solid

Quantity per Container: 48

2. BACKGROUND:

This report contains the testing and test results performed on the pack for both the BLU-91/B Antitank Mine and the BLU-92/B Antipersonnel Mine. Both mines are packaged twelve per fiberboard box and four fiberboard boxes per wood box, in two layers of two, for a total of forty-eight mines.

For purposes of testing, each wood box was packed with steel and/or lead weights and felt filler and then strapped closed to reach a final weight of at least 260 lbs.

3. TESTING AND TEST RESULTS

The following tests were conducted in accordance with Code of Federal Regulations Title 49:

a. Stacking Test:

One wood box was packed with steel and lead weights and felt filler and strapped closed to reach a final weight of 274 lbs. This box was placed under a load of 1919 lbs for seventy-two hours. This test was conducted in place of three specimens stack tested for twenty-four hours each. The load applied to the box exceeded the load required by Code of Federal Regulations Title 49, which is the load a container would see at the bottom of a stack ten feet high. There was no leakage or spillage of contents from the wood box.

b. Loose Cargo Test:

Test No. 1:

One wood box was packed with steel weights and felt filler and was strapped closed to reach a final weight of 260 lbs. The box was loose cargo tested on a table with a steel plate and wood restraining walls for one hour such that the box lifted off the table 1/16". There was no leakage or spillage of contents from the wood box.

Test No. 2:

One wood box was packed with steel weights and felt filler and was strapped closed to reach a final weight of 270 lbs. The box was loose cargo tested on a table with a steel plate and wood restraining walls for one hour such that the box lifted off the table 1/16". There was no leakage or spillage of contents from the wood box.

Test No. 3:

The wood box which was stack tested as described in a. above was loose cargo tested on a table with a steel plate and wood restraining walls for one hour such that the box lifted off the table 1/16". There was no leakage or spillage of contents from the wood box.

c. Drop Testing:

Box No. 1:

One wood box (weighing 260 lbs.) which was loose cargo tested for one hour was dropped from four feet onto a steel plate in the following orientations:

1. directly on the top
2. directly on the bottom
3. directly on a long side of the box

Drop testing caused no apparent damage to the wood box and there was no leakage or spillage of contents from the wood box.

This box was later repacked with steel and lead weights and felt filler to reach a weight of 274 lbs. and was dropped directly on a corner from four feet. An extra strap was applied to this box for support during the drop on the corner. It was located perpendicular to the box's height dimension at the center of the box height. The end of the box did bulge out and open up slightly. There was no leakage or spillage of contents from the wood box.

Box 2:

One wood box (weighing 270 lbs.), which was previously loose cargo tested for one hour, was drop tested directly on a short side. The short side of the wood box split, but the wood box did not open up. There was no leakage or spillage of contents from the wood box.

4. CONCLUSION:

This packaging configuration has successfully met the requirements of Performance Oriented Packaging Testing (no leakage or spillage of contents from the packaging) and is considered safe for domestic and international shipment.

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